Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Scientific Method Warm Up**

Ms. Ottolini, Pre-AP Biology

**Case #1**

*In 1887 a strange nerve disease attacked the people in the Dutch East Indies. The disease was beriberi. Symptoms of the disease included weakness and loss of appetite, victims often died of heart failure. Scientists thought the disease might be caused by bacteria. They injected chickens with bacteria from the blood of patients with beriberi. The injected chickens* http://www.biologycorner.com/resources/bird_chicken.gif*became sick. However, so did a group of chickens that were not injected with bacteria.*

*One of the scientists, Dr. Eijkman, noticed something. Before the experiment, all the chickens had eaten whole-grain rice, but during the experiment, the chickens were fed polished rice. Dr. Eijkman researched this interesting case and he found that polished rice lacked thiamine, a vitamin necessary for good health.*

1. What was the original hypothesis? (Write it in “If, then” format) – *1 point*

2. How was the original hypothesis tested? (Break down the experiment by identifying the elements listed below) *– 5 points*

|  |  |
| --- | --- |
| **Independent Variable** |  |
| **Dependent Variable** |  |
| **Control Group** |  |
| **Experimental Group** |  |
| **Constants** |  |

3. Should the original hypothesis be supported or rejected based on the experiment? Why? *– 2 points*

4. After Dr. Eijkman analyzes the results of his original experiment, what hypothesis can he make regarding the effect of food type on health? (Write it in “If, then” format) – *1 point*

**Case #2**

*Tina believes thinks that a special juice will increase the productivity of workers. She creates two groups of 50 workers each and assigns each group the same task (in this case, they’re supposed to staple a set of papers). Group A is given the special juice to drink while they work. Group B is not given the special juice. After an hour, Tina counts how many stacks of papers each group has made.*

5. What was Tina’s hypothesis? (Write it in “If, then” format) – *1 point*

6. How was the original hypothesis tested? (Break down the experiment by identifying the elements listed below) *– 5 points*

|  |  |
| --- | --- |
| **Independent Variable** |  |
| **Dependent Variable** |  |
| **Control Group** |  |
| **Experimental Group** |  |
| **Constants** |  |